

## Understanding 802.1X and RADIUS Accounting on EX Series Switches

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Juniper Networks EX Series Ethernet Switches support IETF RFC 2866, *RADIUS Accounting*. Configuring RADIUS accounting on an EX Series switch permits statistical data about users logging onto or off a LAN to be collected and sent to a RADIUS accounting server. The statistical data gathered can be used for general network monitoring, to analyze and track usage patterns, or to bill a user based upon the amount of time or type of services accessed.

To configure RADIUS accounting, specify one or more RADIUS accounting servers to receive the statistical data from the switch, and select the type of accounting data to be collected.

The RADIUS accounting server you specify can be the same server used for RADIUS authentication, or it can be a separate RADIUS server. You can specify a list of RADIUS accounting servers. In the event that the primary server (the first one configured) is unavailable, each RADIUS server in the list is tried in the order in which they are configured in the JUNOS Software.

The RADIUS accounting process between a switch and a RADIUS server works like this:

1. A RADIUS accounting server listens for User Datagram Protocol (UDP) packets on a specific port. For example, on FreeRADIUS, the default port is 1813.
2. The switch forwards an accounting-request packet containing an event record to the accounting server. For example, a supplicant is authenticated through 802.1X authentication and connected to the LAN. The event record associated with this supplicant contains an Acct-Status-Type attribute whose value indicates the beginning of user service for this supplicant. When the supplicant's session ends, the accounting request will contain an Acct-Status-Type attribute value indicating the end of user service. The RADIUS accounting server records this as a stop-accounting record containing session information and the length of the session.
3. The RADIUS accounting server logs these events as start-accounting or stop-accounting records. The records are in a file. On FreeRADIUS, the file name is the server's address; for example, 122.69.1.250.
4. The accounting server sends an accounting-response packet back to the switch confirming it has received the accounting request.
5. If the switch does not receive a response from the server, it continues to send accounting requests until an accounting response is returned from the accounting server.

The statistics collected through this process can be displayed from the RADIUS server; to see those statistics, the user accesses the log file configured to receive them.

- Related Topics**
- Example: Connecting a RADIUS Server for 802.1X to an EX Series Switch
  - 802.1X for EX Series Switches Overview

- Configuring 802.1X RADIUS Accounting (CLI Procedure)

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